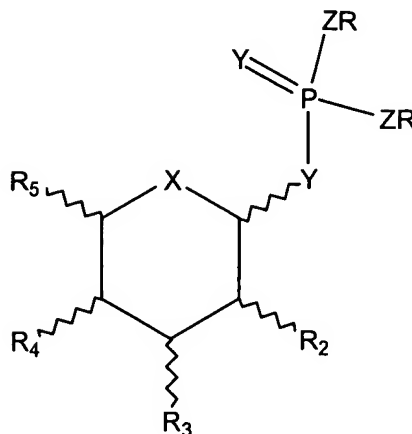


In the Claims:

1. **(currently amended)** A compound represented by structure 1:



1

wherein

X represents O;

Y represents independently for each occurrence O;

Z represents independently for each occurrence O;

R is selected, independently for each occurrence, from the group consisting of alkyl, heteroalkyl, aralkyl, heteroaryl, and heteroaralkyl;

R' is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, acyl, and sulfonyl;

R'' is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aralkyl, heteroaryl, and heteroaralkyl;

R₂, R₃, and R₄ are independently selected from the group consisting of R₆, -OR', -SR', -NR'₂, -OSO₃H, and -OPO₃H₂;

R₅ is selected from the group consisting of R₆, -(CR''₂)_nOR', -(CR''₂)_nSR', and -(CR''₂)_nNR'₂;

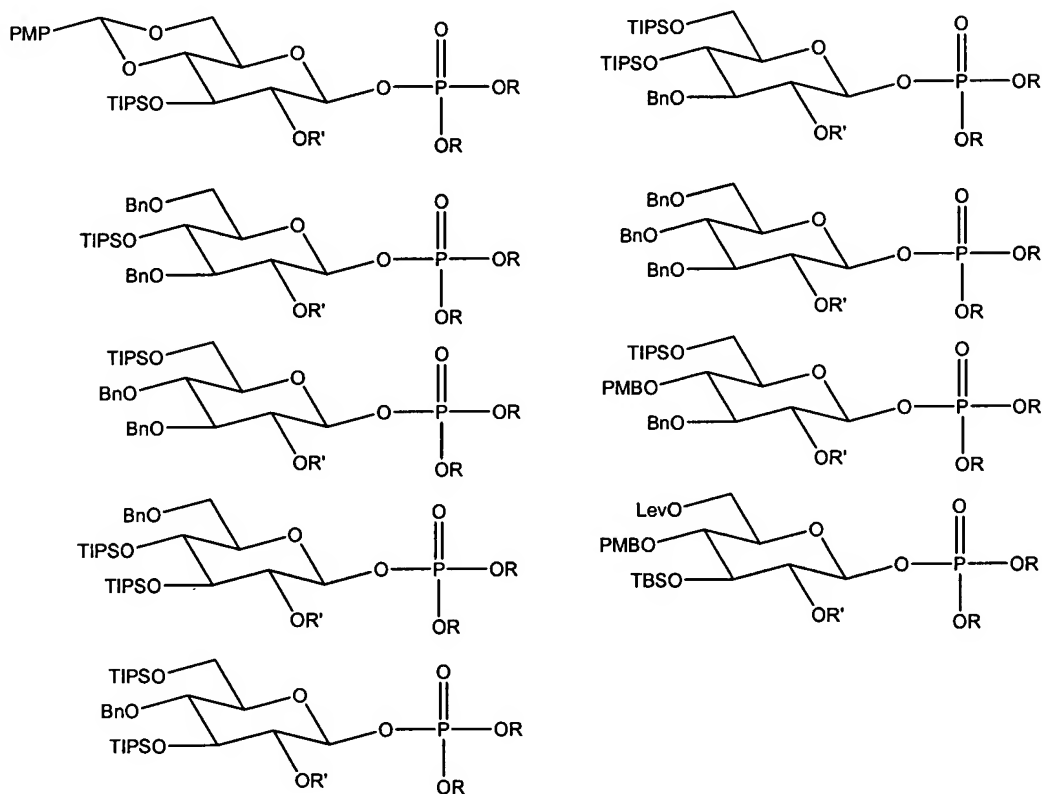
R₆ is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, and heteroaralkyl; and

n is an integer selected from the range 0 to 10 inclusive.

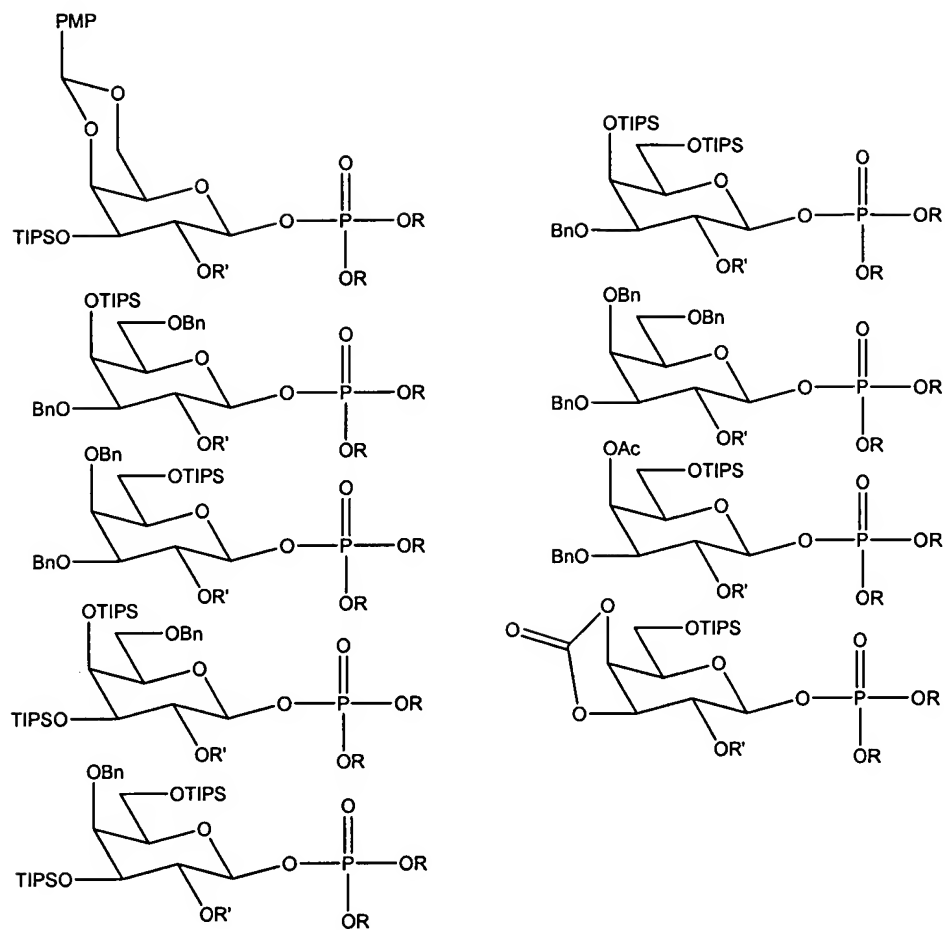
Claims 2-22 (canceled)

23. (currently amended) ~~The compound of claim 1, wherein said A~~ compound is represented by one of the following structures:

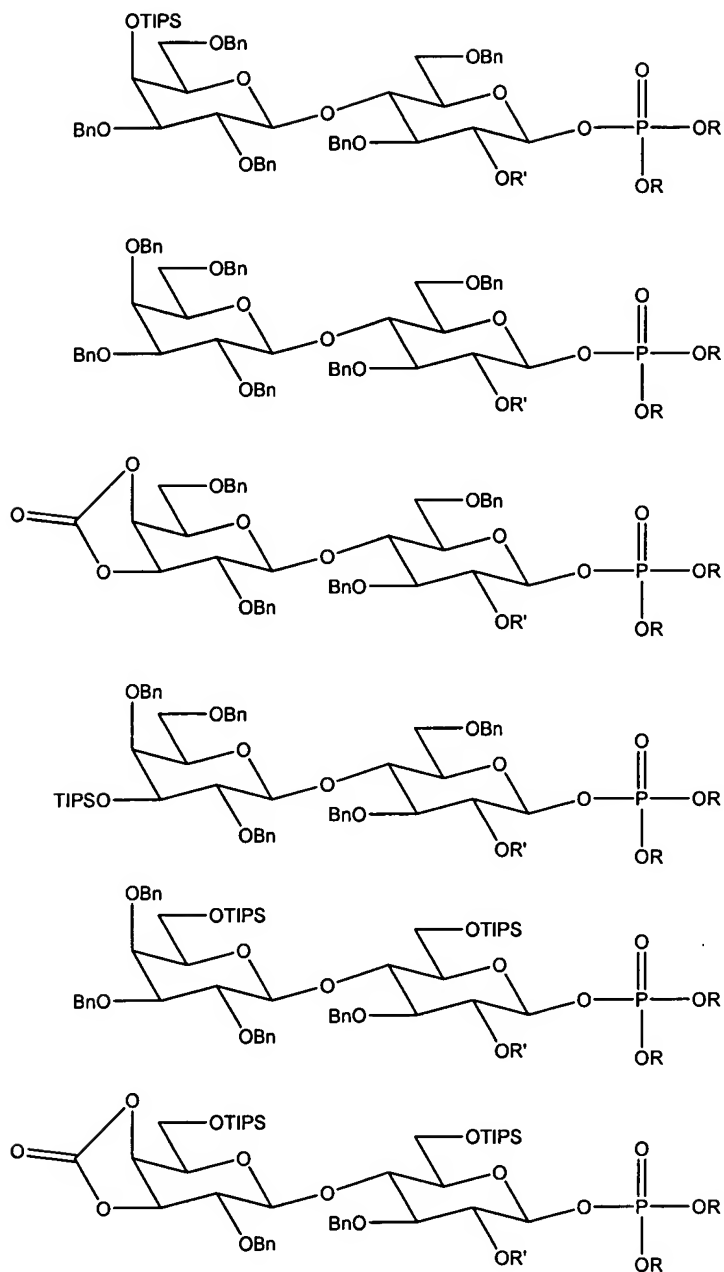
Glucose



Galactose



Lactose



wherein

R is selected independently for each occurrence from the group consisting of methyl, propyl, butyl, pentyl, hexyl, heteroalkyl, aralkyl, heteroaryl, and heteroaralkyl;

R' is selected independently for each occurrence from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, acyl, and sulfonyl;

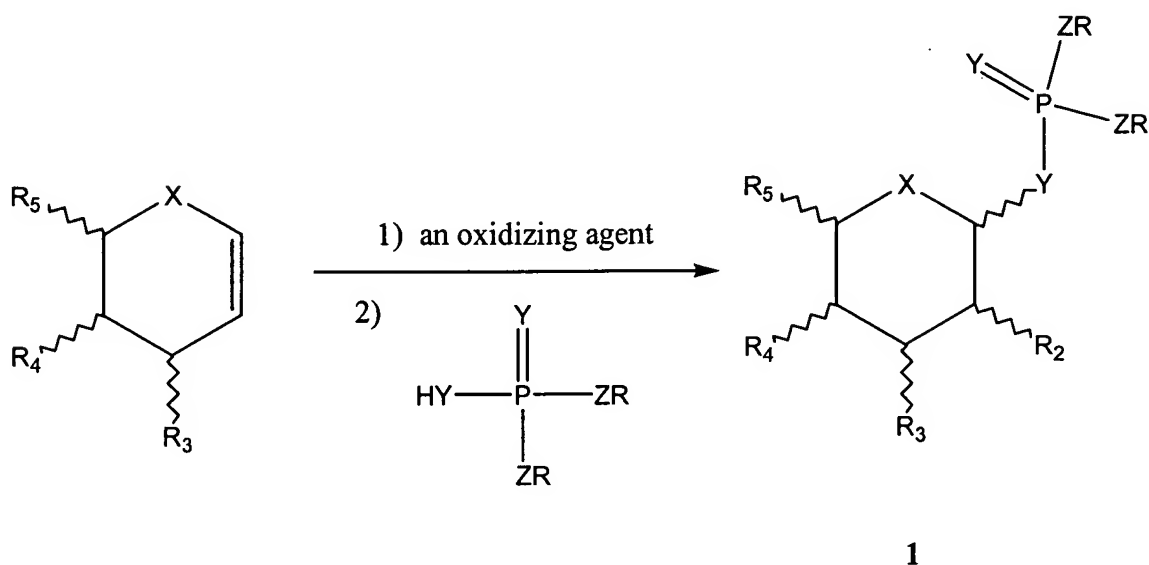
TIPS represents triisopropylsilyl;

PMP represents paramethoxyphenyl; and

Bn represents benzyl.

Claims 24-41 (**canceled**)

42. (**previously presented**) A method of synthesizing a compound represented by 1, wherein said method is represented by the following scheme:



wherein

X represents O;

Y represents independently for each occurrence O;

Z represents independently for each occurrence O;

the oxidizing agent is selected from the group consisting of dioxiranes, percarboxylates, and persulfates;

R is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, and heteroaralkyl;

R' is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, acyl, and sulfonyl;

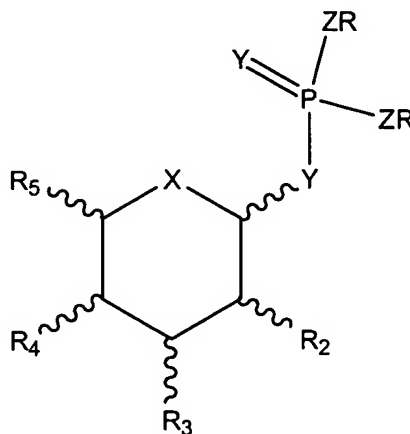
R_2 is OR' ;

R_3 , and R_4 are independently selected from the group consisting of R , $-OR'$, $-SR'$, $-NR'_2$, $-OSO_3H$, and $-OPO_3H_2$;

R_5 is selected from the group consisting of R , $-(CR_2)_nOR'$, $-(CR_2)_nSR'$, and $-(CR_2)_nNR'_2$;
and

n is an integer selected from the range 0 to 10 inclusive.

43. **(original)** The method of claim 42, wherein the oxidizing agent is a dioxirane.
44. **(original)** The method of claim 43, wherein the oxidizing agent is dimethyl dioxirane (DMDO).
45. **(previously presented)** A compound represented by structure 2:



wherein

X represents O ;

Y represents independently for each occurrence O ;

Z represents independently for each occurrence O ;

R represents independently for each occurrence aryl;

R' is selected, independently for each occurrence, from the group consisting of H , alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, acyl, and sulfonyl;

R'' is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, and heteroaralkyl;

R₂ is selected from the group consisting of R₆, -OR', -SR', -NR'₂, -OSO₃H, and -OPO₃H₂;

R₃, and R₄ are independently selected from the group consisting of R₆, -OR₇, -SR', -NR'₂, -OSO₃H, and -OPO₃H₂;

R₅ is selected from the group consisting of R₆, -(CR'')_nOR', -(CR'')_nSR', and -(CR'')_nNR'₂;

R₆ is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, and heteroaralkyl;

R₇ is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, heteroaryl, heteroaralkyl, and sulfonyl; and

n is an integer selected from the range 0 to 10 inclusive.

46. **(previously presented)** The compound of claim 45, wherein R₂ is selected from the group consisting of R₆, -SR', -NR'₂, -OSO₃H, and -OPO₃H₂.
47. **(previously presented)** The compound of claim 45, wherein R₅ is selected from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, -(CR'')_nOR^C, -(CR'')_nSR^S, and -(CR'')_nN(R^N)₂; R^C is selected from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, and sulfonyl; R^S is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, acyl, and sulfonyl; and R^N is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, acyl, and sulfonyl.
48. **(previously presented)** The compound of claim 1, where in R is selected, independently for each occurrence, from the group consisting of alkyl, heteroaryl, and heteroaralkyl.
49. **(previously presented)** The compound of claim 1, wherein R₅ is selected from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, -(CR'')_nOR^C, -(CR'')_nSR^S, and -(CR'')_nN(R^N)₂; R^C is selected from the group consisting of alkyl,

heteroalkyl, aryl, heteroaryl, heteroaralkyl, acyl, and sulfonyl; R^S is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, acyl, and sulfonyl; and R^N is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, acyl, and sulfonyl.